



17/ Appeal Brief
Hawkins
8/6/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of

Detlef LAUK et al

Before the Board of Appeals

Serial No. 09/555,376

Art Unit: 2834

Filed: August 25, 2000

Examiner: K. Addison

For: Electric-Motor Drive Device

APPELLANTS' BRIEF (37 CFR 1.192)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Brief is filed in support of the Notice of Appeal filed on June 3, 2002, appealing the Examiner's decision of making final a rejection of claims 8-20.

This Brief is transmitted in triplicate.

The fee for this Appeal Brief of \$320 should be charged to Deposit Account No. 07-2100 by the attached transmittal form, submitted in duplicate.

I - REAL PARTY IN INTEREST

The real party in interest in this appeal is:

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01 FC:120 320.00 CH

II - RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal, there are no such appeals or interferences. None

III - STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION - Thirteen (13)

Claims in the application are: 8-20.

B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-7.
2. Claims withdrawn from consideration but not canceled:
None.
3. Claims pending: 8-20.
4. Claims allowed: None.
5. Claims rejected: 8-20.

C. CLAIMS ON APPEAL

The claims on appeal are: 8-20.

IV. STATUS OF AMENDMENTS

An amendment under 37 CFR 1.116 was filed on April 15, 2002. In an Advisory Action mailed May 16, 2002, the Examiner indicated that the amendment would not be entered for purposes of appeal.

V. SUMMARY OF THE INVENTION

An electric-motor drive device for auxiliary devices in motor vehicles, such as sliding roofs, window controls, windshield wipers, and the like, having a metal gear housing (17) and a metal cup-shaped motor housing (13) that is slipped with an opening edge (131) onto the gear housing (17) and fixed thereon by roller-burnishing the slipped-on region of the motor housing (13) into the gear housing (17). As illustrated in the corrected drawings filed on August 23, 2001, the roller-burnishing may be performed at two points axially spaced apart from one another with two different roller-burnishing tools.¹ Specification, page 4, lines 9-23.

The gear housing (17) may have an annular groove (20) into which an encompassing annular bead (22), stamped out of the motor housing (13) by the roller-burnishing, protrudes and a radial shoulder (21) which is engaged from behind by an annular collar (23) bent inward from the motor housing (13) by the roller-burnishing. Specification, page 5, lines 8-22.

The motor housing (13) may enclose a stator (14), which comprises a short-circuit ring (15) and permanent segments (16) secured to the short-circuit ring (15). The motor housing (13) may also be provided with an encompassing, angular chamfer (18), made by turning into the face end of the gear housing (17) oriented toward the

¹ The Examiner objected to the original drawings in the Office Action mailed May 23, 2001, because the drawings did not show roller-burnishing. In response, a proposed drawing correction was filed on August 23, 2001. The Examiner has not explicitly notified the applicants of the Examiner's disapproval of the proposed drawing corrections and has not repeated the objection to the drawings. Therefore, the applicants understand that the proposed corrections to the drawings have been approved. See MPEP 608.02(x) (8th ed., Aug. 2001).

motor housing (13), onto which chamfer the short-circuit ring (15) may be slipped with positive engagement until an annular end face of the short-circuit ring (15) meets a radial leg face (181) of the chamfer (18). Specification, page 4, line 23 through page 5, line 4.

The gear housing (17) may also have an annular rib (24) that protrudes radially from the outer circumference, whose annular rib face forms the radial shoulder (21) and another annular rib face forms a radial extension of the radial leg face (181) of the chamfer (18). The opening edge (131) of the motor housing (13), which is oriented toward the gear housing (17), may be radially widened and braced on opposite annular rib faces of the annular rib (24). Specification, page 5, lines 16-20 and page 5, line 23 through page 6, line 8.

VI. ISSUES

1. Whether claims 8-17 are unpatentable under 35 U.S.C. 103(a) over Ineson (EP 0 626 747) et al in view of Oruganty et al (US 6,018,223).

2. Whether claims 18-20 are unpatentable under 35 U.S.C. 103(a) over Ineson et al in view of Oruganty et al in combination with Bayah (US 4,694,211).

VII. GROUPING OF THE CLAIMS

1. Claims 8-17 do not stand or fall together.
2. Claims 18-20 do not stand or fall together.

VIII. ARGUMENTS

ISSUE 1.

Claims 8-17 are not unpatentable under 35 U.S.C. 103 over Ineson et al in view of Oruganty et al.

To establish prima facie obviousness of a claimed invention under 35 U.S.C. 103, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Independent claim 8 calls for an electric-motor drive device having a metal gear housing and a metal cup-shaped motor housing. Independent claim 8 also calls for the metal cup-shaped motor housing to have an opening edge which is slipped onto the gear housing and fixed thereon by roller-burnishing.

The Examiner's findings of fact with respect to the Ineson patent is set forth in the final Office Action mailed February 11, 2002, as follows:

Ineson discloses in fig. 2 a motor housing that is slipped with the gear housing (66) slipped on the gear housing wherein the gear housing (42) has an angular groove (74) into which an encompassing annular bead (1) and radial shoulder (14) is remote from the housing, which is engaged from behind by and annular collar (1b) bent inward from the motor housing and an annular rib (19f) whose other annular rib face form a radial extension (2b) of the radial leg face of the chamfer (2a).

Ineson does not disclose a short circuit ring, or a metal housing for the gear and motor.²

The Examiner's finding of facts with respect to Ineson is clearly erroneous. The Examiner refers to both elements (66) and (42) as the gear housing and describes the annular groove (74) as being formed in the gear housing. The Examiner also refers to the element (14) as the radial shoulder which is engaged from behind by an annular collar (1b) bent inward from the motor housing. Further, the Examiner describes element (19f) as annular rib whose other annular rib face forms a radial extension (2b) of the radial leg face of the chamfer (2a).

Ineson actually teaches an electric motor having a housing including a cylindrical stator shroud (14), a rear end cover (16) and a front end cover (18). The front and rear end covers are force fitted around lips (14r, 14f) formed at opposite ends of the shroud (14). See col.3, lines 4-11. In addition, the components of the motor are held together by bolts (48). See col. 4, lines 16-26. The front end cover (18) has an annular seat (Fig. 2, 18s) for securing a bearing (22) and an opening (44) through which a length of the motor shaft (20) extends. Ineson does show a gear (unnumbered in Fig. 2) mounted on the shaft (20), but no housing or enclosure for the gear is taught by Ineson.

² Numerals 1, 1b, 2a and 2b are handwritten, presumably by the Examiner, on the copy of Ineson's Fig.2, which was supplied by the Office with the Office Action mailed May 23, 2001. For the Board's convenience, a copy of Fig. 2 as it appears in the applicants' file is attached to this Brief as "Exhibit 1."

Element (66) is actually a plastic casing, which is injection molded over shroud (14), rear end cover (16) and part of front end cover (18), not a metal gear housing. Element (42) is also not a metal gear housing, but a flange formed on front end cover (18). It follows that the annular groove (74), described by the Examiner as formed in the gear housing, is actually formed on the outer surface of the cylindrical portion (19) of front end cover (18). The front end cover is part of the motor housing.

The element (14), which the Examiner refers to as the radial shoulder, is actually a cylindrical stator shroud. Further, the shroud (14) is not engaged from behind by an annular collar (1b) bent inward from the motor housing as alleged by the Examiner. The "collar" (1b) is actually part of the plastic casing 66 and is injection molded into the channel (74) formed in end cover (18). There is no bending or burnishing of a metal motor housing taught in Ineson et al.

There also is no teaching in Ineson of a metal motor housing which is slipped with an opening edge onto a metal gear housing and roller-burnished or otherwise bent into the gear housing. Further, Ineson teaches that the metal shroud (14) is secured to the end covers (16) and (18) by force fit, not by bending the ends of the shroud into the end covers. While Oruganty et al does teach an electric motor (51) attached to a gear drive (150) and a gear housing (71), the reference does not specifically disclose the manner by which the motor, gear drive and gear housing are

connected. Although, Fig. 2 appears to show the motor and gear drive connected by means of bolts or screws.

Neither Ineson et al nor Oruganty et al teaches or suggests a metal cup-shaped motor housing having an opening edge which is slipped onto a metal gear housing and fixed thereon by roller-burnishing or any other metal deforming process. Accordingly, claim 8 is not rendered obvious by the combined teachings of Ineson et al and Oruganty et al.

Claims 9-17 are dependent on claim 8 and are not unpatentable under 35 U.S.C. 103 over Ineson et al in view of Oruganty et al for the reasons set forth above with respect to claim 8.

In addition, claim 9 requires the roller-burnishing to be done at two points axially spaced apart from one another with two different roller-burnishing tools. Since neither of the applied references teaches assembling a metal motor housing to a metal gear housing by roller-burnishing or any other metal deforming process, the references cannot possibly teach the specific limitations of claim 9.

Claims 10 and 15 call for a metal gear housing with an annular groove in the region where the metal motor housing is slipped-on and an annular bead, stamped out of the motor housing by the roller-burnishing, protruding into the annular groove with positive engagement. No such annular groove or bead is taught or suggested by the applied prior art.

Claims 11, 16 and 17 call for a gear housing with an encompassing radial shoulder in the region where the metal motor housing is slipped-on which is engaged from behind by an annular collar bent inward from the motor housing by the roller-burnishing. No such radial shoulder or annular collar is taught or suggested by the applied prior art.

Claim 12 calls for a motor housing enclosing a stator, which comprises a short-circuit ring and permanent segments secured to it, and an encompassing, angular chamfer formed in the face end of the gear housing oriented toward the motor housing, onto which chamfer the short-circuit ring is slipped with positive engagement until an annular end face of the short-circuit ring meets a radial leg face of the chamfer. No such structure is taught or suggested by the applied prior art.

Claim 13 depends on claim 11 and calls for an annular rib that protrudes radially from the outer circumference of the metal gear housing in the region where the metal motor housing is slipped-on, whose annular rib face forms the radial shoulder and another annular rib face forms a radial extension of the radial leg face of the chamfer. No such metal gear housing structure is taught or suggested by the applied prior art.

Claim 14 depends on claim 13 and calls for the motor housing to be radially widened on its opening edge oriented toward the gear housing and braced on opposite annular rib faces of the annular rib. No such metal motor housing structure is taught or suggested by the applied prior art.

ISSUE 2.

Claims 18-20 are not unpatentable under 35 U.S.C. 103 over Ineson et al in view of Oruganty et al in combination with Bayah et al.

Bayah et al is cited by the Examiner for its teaching of an electric motor having a housing (10), a short-circuit ring (16) and permanent magnets (17). Even if it had been obvious to modify the combined teachings of Ineson et al and Oruganty et al in view of the teachings of Bayah et al, one of ordinary skill would not have arrived at the applicants' invention as defined by claims 18-20.

Claims 18, 19 and 20 are dependent on claims 9, 10 and 11, respectively, and, thus, includes all of the structural limitations recited in the claims from which they depend. Bayah et al clearly does not solve the basic deficiencies of Ineson et al and Oruganty et al set forth above with respect to the rejections of claims 8, 9, 10 and 11.

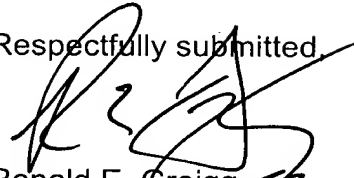
Accordingly, it is believed that Ineson et al in view of Oruganty et al in combination with Bayah et al does not teach or suggest the structure which is recited in claims 18-20. .

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IX - APPENDIX OF CLAIMS

An appendix of the claims in this application is attached.

Respectfully submitted,



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CLAIMS ON APPEAL

8. An electric-motor drive device for auxiliary devices in motor vehicles, such as sliding roofs, window controls, windshield wipers, and the like, having a metal gear housing (17) and a metal cup-shaped motor housing (13) that is slipped with an opening edge (131) onto the gear housing (17) and fixed thereon, the improvement wherein the slipped-on region of the motor housing (13) that fits over the gear housing (17), is roller-burnished into the gear housing (17).
9. The drive device of claim 8, wherein the roller-burnishing is done at two points axially spaced apart from one another with two different roller-burnishing tools.
10. The drive device of claim 8, wherein the gear housing (17), in the slipped-on region of the motor housing (13), has an annular groove (20) into which an encompassing annular bead (22), stamped out of the motor housing (13) by the roller-burnishing, protrudes with positive engagement.
11. The drive device of claim 8, wherein on the gear housing (17) in the motor housing slipped-on region, an encompassing radial shoulder (21) remote from the motor housing (13) is embodied, which is engaged from behind by an annular collar (23) bent inward from the motor housing (13) by the roller-burnishing.

12. The drive device of claim 8, wherein the motor housing (13) encloses a stator (14), which comprises a short-circuit ring (15) and permanent segments (16) secured to it, and that an encompassing, angular chamfer (18) is made by turning into the face end of the gear housing (17) oriented toward the motor housing (13), onto which chamfer the short-circuit ring (15) is slipped with positive engagement until an annular end face of the short-circuit ring (15) meets a radial leg face (181) of the chamfer (18).

13. The drive device of claim 11, wherein the gear housing (17), in its motor housing slipped-on region, has an annular rib (24) that protrudes radially from the outer circumference, whose annular rib face forms the radial shoulder (21) and another annular rib face forms a radial extension of the radial leg face (181) of the chamfer (18).

14. The drive device of claim 13, wherein the motor housing (13), on its opening edge (131) oriented toward the gear housing (17), is radially widened and is braced on opposite annular rib faces of the annular rib (24).

15. The drive device of claim 9, wherein the gear housing (17), in the slipped-on region of the motor housing (13), has an annular groove (20) into which an encompassing annular bead (22), stamped out of the motor housing (13) by the roller-burnishing, protrudes with positive engagement.

16. The drive device of claim 9, wherein on the gear housing (17) in the motor housing slipped-on region, an encompassing radial shoulder (21) remote from the motor housing (13) is embodied, which is engaged from behind by an annular collar (23) bent inward from the motor housing (13) by the roller-burnishing.

17. The drive device of claim 10, wherein on the gear housing (17) in the motor housing slipped-on region, an encompassing radial shoulder (21) remote from the motor housing (13) is embodied, which is engaged from behind by an annular collar (23) bent inward from the motor housing (13) by the roller-burnishing.

18. The drive device of claim 9, wherein the motor housing (13) encloses a stator (14), which comprises a short-circuit ring (15) and permanent segments (16) secured to it, and that an encompassing, angular chamfer (18) is made by turning into the face end of the gear housing (17) oriented toward the motor housing (13), onto which chamfer the short-circuit ring (15) is slipped with positive engagement until an annular end face meets a radial leg face (181) of the chamfer (18).

19. The drive device of claim 10, wherein the motor housing (13) encloses a stator (14), which comprises a short-circuit ring (15) and permanent segments (16) secured to it, and that an encompassing, angular chamfer (18) is made by turning into the face end of the gear housing (17) oriented toward the motor housing (13),

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onto which chamfer the short-circuit ring (15) is slipped with positive engagement until annular end face meets a radial leg face (181) of the chamfer (18).

20. The drive device of claim 11, wherein the motor housing (13) encloses a stator (14), which comprises a short-circuit ring (15) and permanent segments (16) secured to it, and that an encompassing, angular chamfer (18) is made by turning into the face end of the gear housing (17) oriented toward the motor housing (13), onto which chamfer the short-circuit ring (15) is slipped with positive engagement until an annular end face meets a radial leg face (181) of the chamfer (18).

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Quilley
Cable

